

CLAIMS

1. An injection molding machine including a motor having a brake unit, wherein:

5 the brake unit generates a braking torque greater than or equal to a maximum torque generable by the motor.

2. The injection molding machine as claimed in
10 claim 1, further comprising:

 a brake driving circuit configured to supply power to the brake unit;

 an open-circuit detection circuit configured to detect an open circuit of the brake driving circuit; and

15 a controller configured to cause a display to display the open circuit and stop rotation of the motor upon detection of the open circuit in the open-circuit detection circuit,

 wherein the brake unit is an electromagnetic
20 brake.

3. The injection molding machine as claimed in claim 1, wherein:

 the motor having the brake unit is a motor for
25 driving an ejector apparatus;

 the ejector apparatus has a return spring to bias an ejector pin in a direction opposite to a direction in which the ejector pin is projected; and

 the braking torque is greater than or equal to a
30 torque generated by a biasing force of the return spring.

4. The injection molding machine as claimed in claim 1, wherein the motor having the brake unit is a

motor for driving an injection apparatus.

5 5. The injection molding machine as claimed in
claim 1, wherein the motor having the brake unit is a
motor for driving a mold clamping apparatus.

10 6. The injection molding machine as claimed in
claim 1, wherein the motor having the brake unit is a
driving motor for moving an entire injection apparatus.

10 7. The injection molding machine as claimed in
claim 1, further comprising:
a controller configured to cause the brake unit
to perform braking after detecting stoppage of rotation of
15 the motor having the brake unit.

8. A drive unit of a molding machine,
comprising:
a motor having an output shaft coupled to a
20 driven part of the molding machine, and configured to
rotate the output shaft; and
a brake unit provided on a frame of the motor
and configured to stop rotation of the output shaft,
wherein a braking torque of the brake unit is
25 set to be greater than a maximum torque of the motor.

9. The drive unit of the molding machine as
claimed in claim 8, wherein the brake unit comprises:
a brake disc attached to the output shaft;
30 a brake pad fixed so as to be unrotatable with
respect to the frame, and configured to be pressed against
the brake disc; and
an operation part provided on the frame and

configured to press the brake pad against the brake disc.

10. The drive unit of the molding machine as
claimed in claim 9, wherein the brake unit is an
5 electromagnetic brake having an electromagnetic coil
configured to move the brake pad in order to release a
braking force.

11. The drive unit of the molding machine as
10 claimed in claim 8, further comprising:
a brake cover attached to the frame and covering
the brake unit with a part of the brake unit being open;
and
a rotational speed detection part attached to
15 the brake cover and configured to detect a rotational
speed of the output shaft.

12. The drive unit of the molding machine as
claimed in claim 8, further comprising:
20 a brake cover attached to the frame and covering
the brake unit with a part of the brake unit being open,
wherein the brake cover comprises a strip-shaped
body.

13. The drive unit of the molding machine as
25 claimed in claim 8, wherein:
the output shaft is hollow; and
a part of a movement mechanism for moving the
driven part is provided in the output shaft.